

PVA Gateway

EPICS Collaboration Meeting
Slovenia, Sept. 2022

Kay Kasemir

ORNL is managed by UT-Battelle, LLC for the US Department of Energy

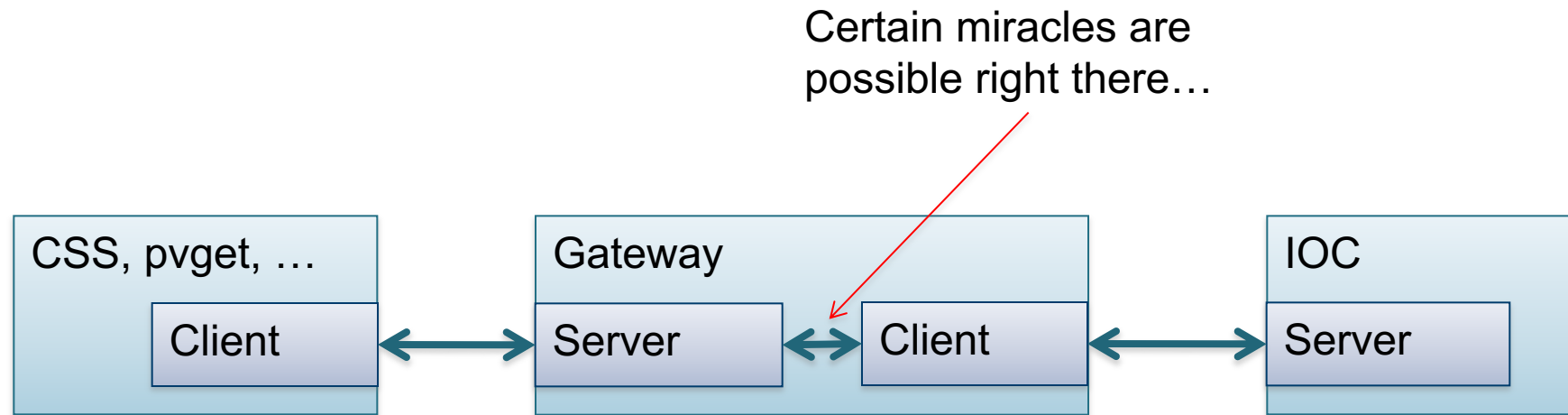
Examples will use the PV Access Gateway,
<https://mdavidsaver.github.io/p4p/gw.html>

The Channel Access Gateway is a different tool,
<https://epics.anl.gov/extensions/gateway/index.php>,
but same ideas apply.

PV Access or Channel Access 101

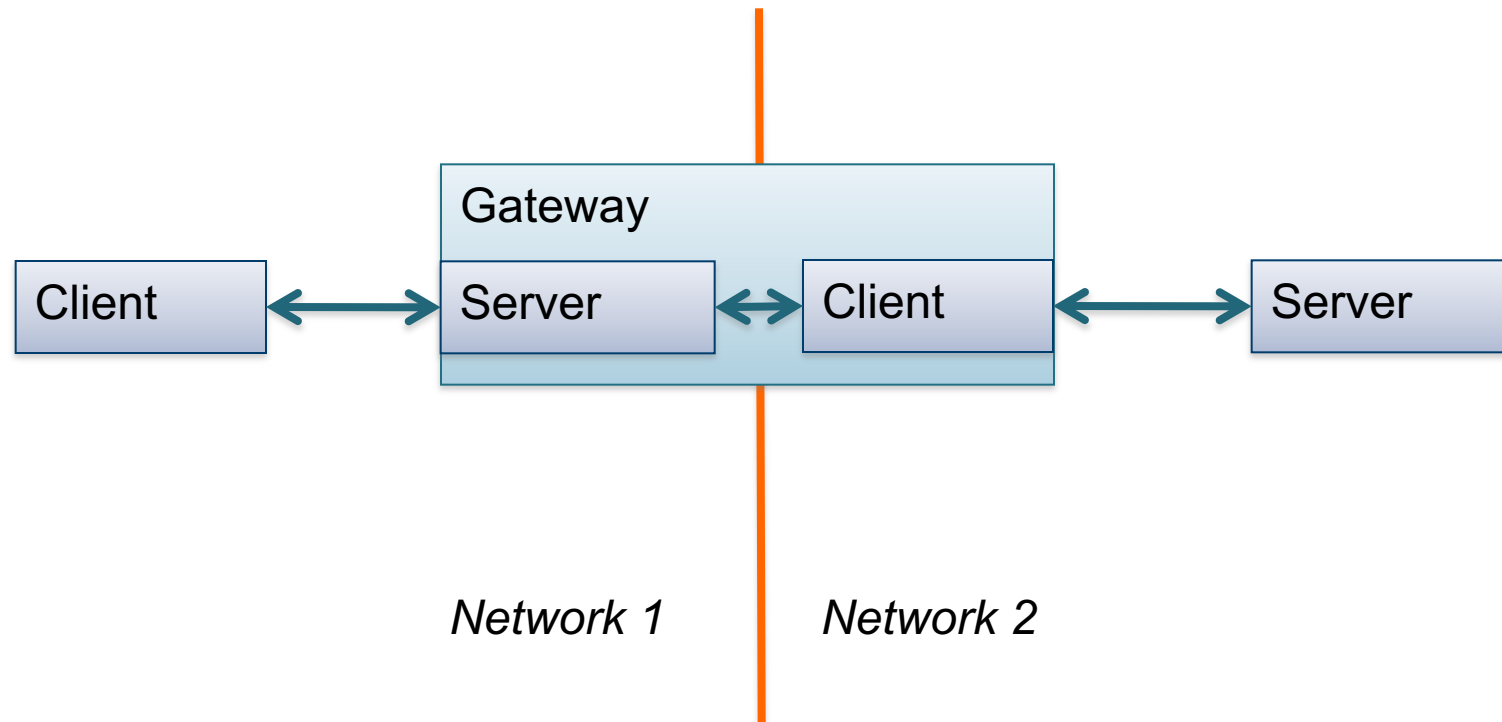


Gateway Principle



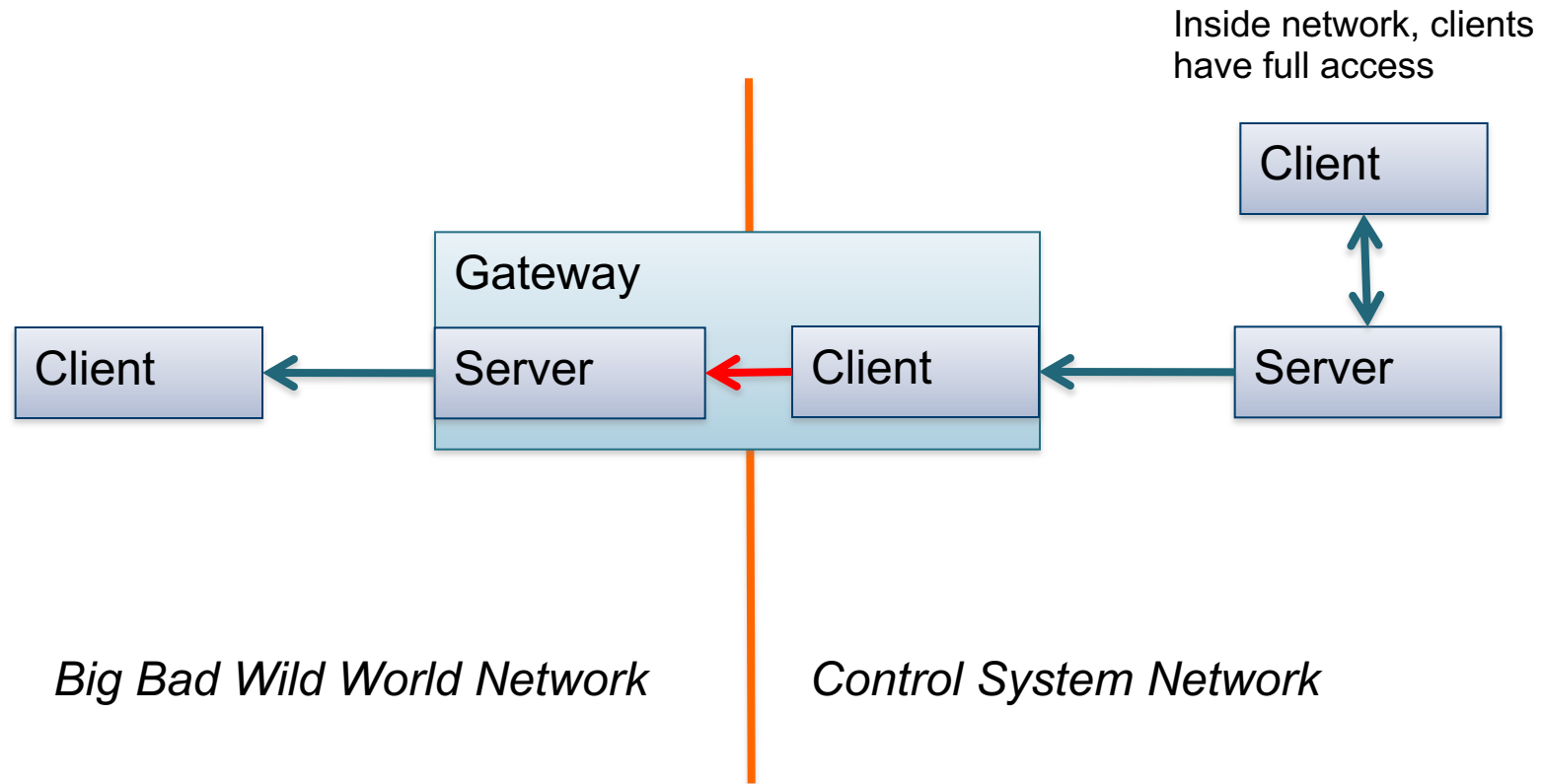
Why? Bridge Networks!

Gateway on computer w/ multiple network connections. Maybe in DMZ.



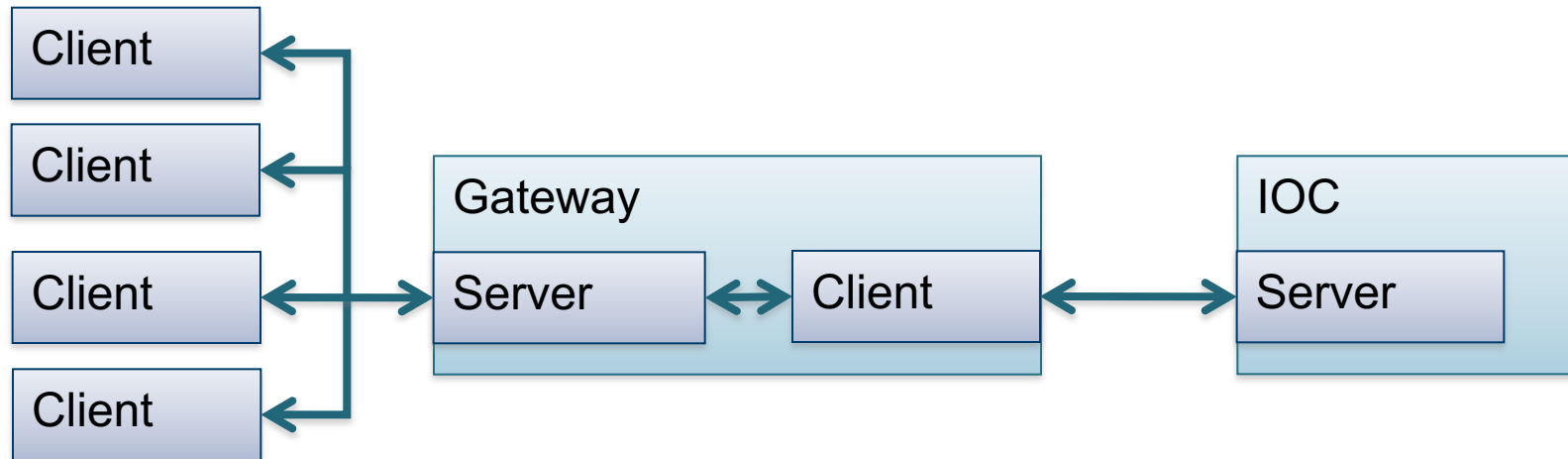
Why? Access Control!

Gateway often 'read only'



Why? Reduce network load!

Gateway buffers connections and values.



Clients disconnect from GW

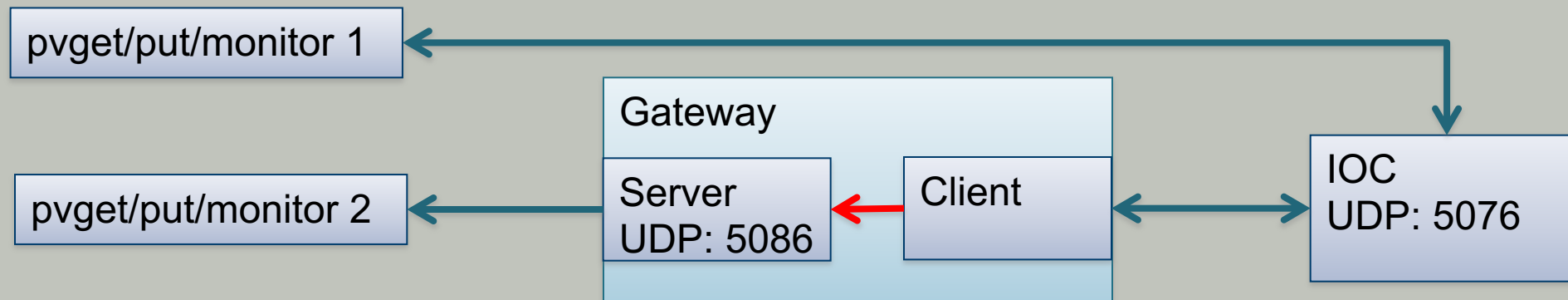
→ GW keeps its connection for a little while.
Reduced search requests,
IOC connects/disconnects

Configuration

- Read from where?
 - Like EPICS_CA_ADDR_LIST resp. EPICS_PVA_ADDR_LIST
- Serve to whom?
 - Network interfaces on which to run server
 - PVA/CA security
- Other
 - Publish GW status via extra PVs?
 - Transform PV names?

Example: Standalone Demo

All on 'localhost'



Example

- Start a PVA server

```
cd /ics/examples/24_pvaccess  
python3 4_server.py
```
- Connect to it the normal way, note how it uses port 5076 to search for the PVA server

```
EPICS_PVA_DEBUG=100 pvget demo:value
```
- Read gateway.conf, start it

```
pvagw -v gateway.conf
```
- Try examples mentioned in gateway.conf

```
export EPICS_PVA_AUTO_ADD_LIST=NO  
export EPICS_PVA_ADDR_LIST=127.0.0.1:5086  
pvmonitor demo:value  
pvput demo:limit 40
```

More..

Everything you ever wanted to know

<https://epics.anl.gov/extensions/gateway/index.php> or

<https://mdavidsaver.github.io/p4p/gw.html>

Things to try:

Create configuration that generally
uses "readOnly":false
.. but adds "pvlist":"some.pvlist",
and in some.pvlist you allow
write access to demo:limit
but not to demo:delay